

Notice of Allowability

Application No.

09/892,124

Examiner

Dung X Nguyen

Applicant(s)

TU ET AL.

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to application filed on 26 June 2001.
2. ☒ The allowed claim(s) is/are 1 - 40.
3. ☒ The drawings filed on 26 June 2001 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 01/09/02
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.


MOHAMMED GHAYOUR
SUPERVISORY PATENT EXAMINER

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it **MUST** be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Mr. Jens Jenkins, the attorney's applicant, register # 44803, on December 27, 2004.

IN THE CLAIMS:

In claim 1, the statement of "at least two mixers, each connected to one of the at least two frequency sources and the input signal, wherein the at least mixers position at a first channel at a first, relative lower, intermediate frequency (IF) and a second channel at a second, relative higher, intermediate frequency (IF)" as recited in lines 9 – 12 has been finally changed to "at least two mixers, each connected to one of the at least two frequency sources and the input signal, wherein one of the at least two mixers positions a first channel at a first intermediate frequency (IF), relative lower than a second intermediate frequency (IF) and the other positions a second channel at the second intermediate frequency (IF), relative higher than the first intermediate frequency (IF);".

In claim 11, the statement of "down conversion means for down converting a first channel to a first, relative lower, intermediate frequency and for down converting a second channel to a second, relative higher, intermediate frequency, wherein the means for down converting is coupled to an input signal that includes a plurality of channels;" as recited in lines 7 – 10 has been finally changed to ""down conversion means for down converting a first channel to a first intermediate frequency (IF), relative lower than a second intermediate frequency (IF), and for down converting a second channel to the second intermediate frequency (IF), relative higher than the first intermediate frequency (IF), wherein the means for down converting is coupled to an input signal that includes a plurality of channels;"

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In claim 17, the statement of “at least two mixers, each connected to one of the at least two frequency synthesizers and the input signal, wherein the at least mixers position at a first channel at a first, relative lower, intermediate frequency (IF) and a second channel at a second, relative higher, intermediate frequency (IF);” as recited in lines 7 – 10 has been finally changed to “at least two mixers, each connected to one of the at least two frequency synthesizers and the input signal, wherein one of the at least two mixers position a first channel at a first intermediate frequency (IF), relative lower than a second intermediate frequency (IF) and the other positions a second channel at the second intermediate frequency (IF), relative higher than the first intermediate frequency (IF);”.

In claims 22 and 33, respectively, the statement of “In a system capable...” as recited in line 1 has been changed to “A method of a system capable...”, also “a” in the last appearance has been changed to “that”.

Allowable Subject Matter

2. **Claims 1 – 40 are allowable.** The following is an examiner’s statement of reasons for allowance:

Regarding to the claimed invention, the prior art of record fails to show or render obvious of a method and its corresponding system, comprising:

At least two frequency sources, one for each of at least two channels to be selected from a plurality of channels;

At least two mixers, each connected to one of the at least two frequency sources and the input signal, wherein one of the at least two mixers positions a first channel at a first intermediate frequency (IF), relative lower than a second intermediate frequency (IF), and the other positions a second channel at the second intermediate frequency (IF), relative higher than the first intermediate frequency (IF);

A low pass filter connected to one of the mixers for receiving the first IF and removing signals above the first channel;

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A high pass filter connected to one of the mixers for receiving the second IF and removing signals below the second channel;

A summer connected to the low and high pass filters for receiving and combining the first filtered IF and second filtered IF, such that the first channel and the second channel are adjacent to each other;

A band pass filter connected to the summer for receiving the combines first and second filtered Ifs and removing signals below the first channel and above the second channel; and

An amplifier connected to the band pass filter for receiving the resulting multiple channel IF signal, wherein the gain of the amplifier is controlled by an automatic gain control signal.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Oshima. (US 6,728,467 B2) discloses a communication system.

Goldston et al. (US 6,556,639 B1) discloses a method and its corresponding apparatus for determining transmission mode and synchronization for a digital audio broadcasting signal.

Tasurumi et al. (US 6,498,929 B1) discloses a receiver having DC offset decreasing function and communication system using the same..

Petruzzelli. (US 5,959,592) discloses an IF bandstacked low noise block converter combined with diplexer.

Goldston et al. (US 5,956,373) discloses an AM compatible digital audio broadcasting signal transmission using digitally modulated orthogonal noise-like sequences.

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Contact Information

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung X. Nguyen whose telephone number is (571) 272-3010. The examiner can normally be reached on Monday through Friday from 8:00 AM to 17:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Ghayour Mohammad H. can be reached on (571) 272-3021. The fax phone numbers for this group is (571) 273-3021.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571) 272-2600.

DXN

December 27, 2004